

Free-Floating Signposts

In deep snow, signposts supported only by snow work best. In every deep-snow situation, this was the technique crews used, and it is the technique we recommend. Signposts supported only by snow also work well for moderate snow levels.

Wooden Signposts

The Payette National Forest mounts signs on 2 by 4's (50 by 100 mm) tamped into the snow. Other Forests and Districts use 2 by 2's (50 by 50 mm) for the same purpose, placing them next to nearly buried signposts in some instances (Figure 9). The 2 by 2's have a tendency to freeze in place in wet snow and are difficult to raise without breaking. Another option for reassurance markers is native 12-foot (3.7-m) poles. During periods of unexpected heavy snowpacks, Districts may stick temporary wooden signposts in the snow on top of buried fixed signposts. All of these signposts are relatively inexpensive.

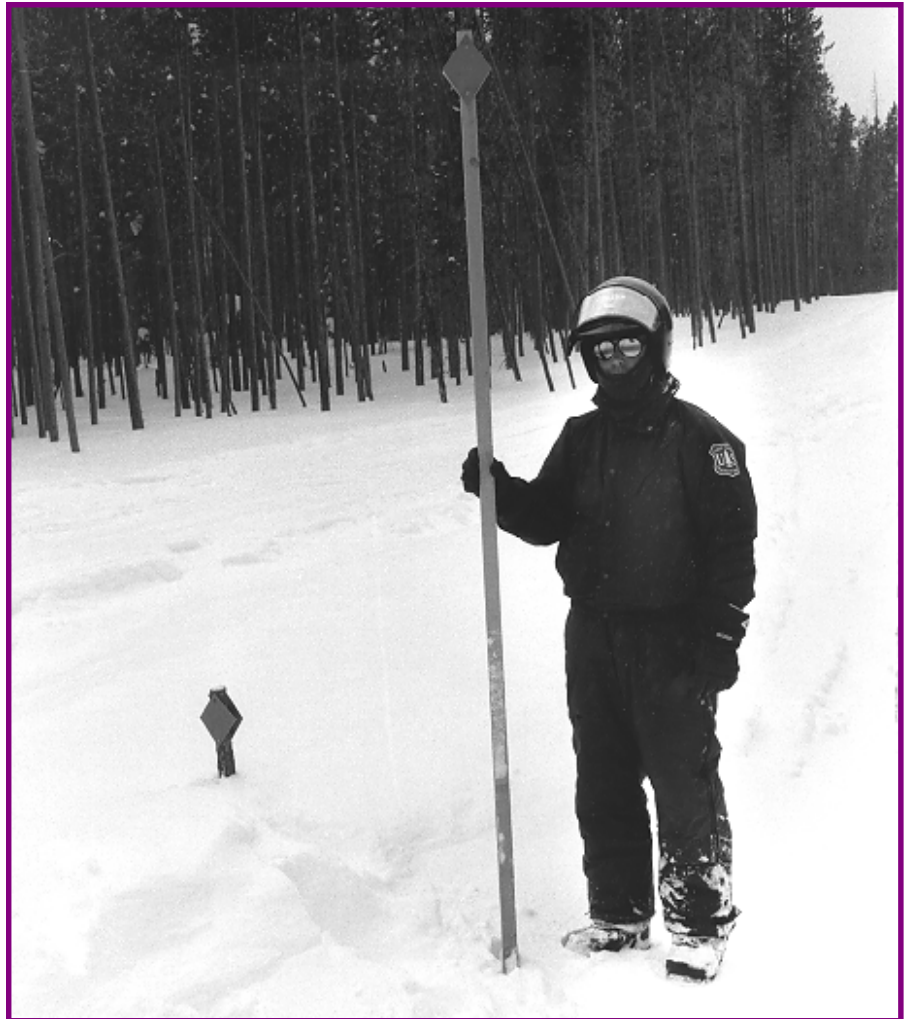


Figure 9—Standard 2 by 2's or native poles are inexpensive and effective ways to place reassurance markers. They freeze in pretty solidly, however, and are difficult to raise without breaking.



**Ron Naber speaking about
Two Top Mountain in Montana:**

***“The visibility is so poor up here,
often the markers are the only way a
rider can tell he’s on the trail. It’s
important to keep them visible.”***

PVC Pipe Signposts

The Deschutes National Forest signs many miles of winter trails and posts wilderness boundaries to prohibit motorized entry. The signposts that work best are 10-foot (3-m) sections of 2-inch (51-mm) and 2½-inch (63.5-mm) Schedule 40 PVC pipe (Figures 10 and 11). On the boundary of the Three Sisters Wilderness, these signposts are exposed to rime, ice, heavy snow, winds of up to 80 miles per hour (128 kilometers per hour), and temperatures as low as -20 °F (-29 °C).

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Signs are placed early in the season in at least 3 feet (1 m) of snow, then raised four to six times during the course of the winter as snow piles up.



Figure 10—PVC pipe has worked best to post the Three Sisters Wilderness boundary. The upper two-thirds of the pipe is painted orange to improve visibility.

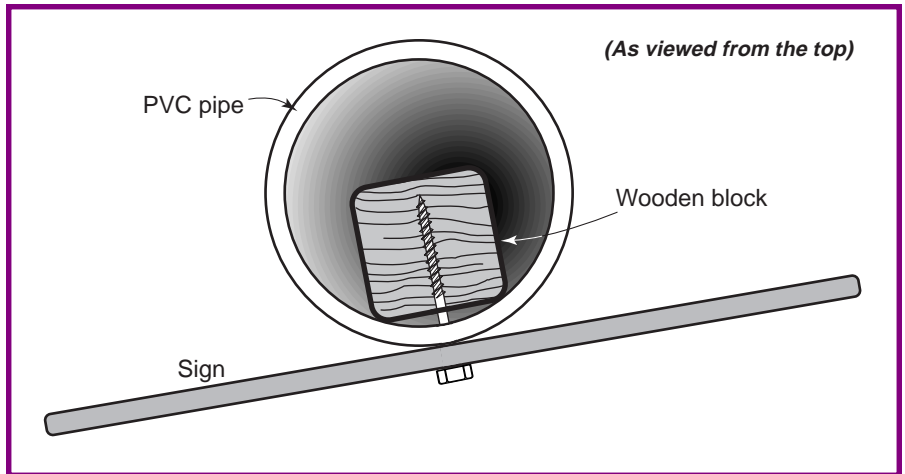


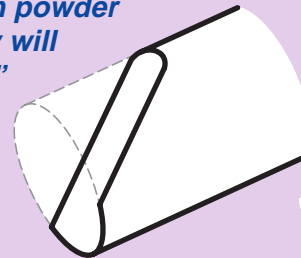
Figure 11—A wooden block inside the round PVC pipe allows signs to be mounted securely. Drill holes perpendicular to the grain to prevent the wood from splitting. Then screw the lag bolts into the wood.



- *In the heavy, wet snow of the Cascades, PVC pipe has a tendency to freeze to the snow. A couple of sharp whacks on the top of the pipe with a short piece of 2 by 4 usually breaks it free.*

- *“There is a knack to setting PVC signposts so they don’t weathervane. I cut about 75% of the bottom end of the post at about a 45° angle. This helps to keep it from spinning. I set the post by pushing it into the snow until it hits a dense layer, then I give it a little twist to set it. If you set it just in powder snow, it most likely will turn with the wind.”*

—Chris Sabo



Free-Floating Signposts

Two inexpensive products to consider for snow trail signposts are white PVC Schedule 40 water line and gray PVC Schedule 40 electrical conduit. We saw the white pipe being used for signposts in the field. The gray pipe has ultraviolet (UV) inhibitors that provide some degree of resistance to degradation by sunlight and might work better. It costs about the same as the white pipe.

To improve visibility, you will probably want to paint the part of the PVC pipe that extends above the snow. Do not paint the whole pipe, because you want the part buried in the snow to be as slippery as possible. Paint doesn't stick to untreated PVC, so our local paint store suggested scuff sanding to prepare the surface, then painting with polyurethane enamel. We did not have time to verify how well this works (Figures 12 and 13).

PVC pipe becomes brittle at very cold temperatures and after long exposure to sunlight. Painting may help protect



Figure 12—Two PVC pipes hold this large sign in place. Because the posts are not anchored to the ground, they can be raised as the snow becomes deeper.

it from sunlight. How long will the pipe last in the field? The Bend/Fort Rock Ranger District on the Deschutes National Forest reported increased ice and snow buildup during the third season of use, making the PVC posts more difficult to lift. This could be due to the degradation of the PVC. Perhaps it could be temporarily fixed by waxing the lower part of the post. In this instance, the white pipe was used instead of the gray, UV-resistant pipe.



Figure 13—ReflectORIZED tape greatly improves the sign's visibility at night.



Schedule 40 PVC pipe costs about \$4.25 for a 10-foot (3-m) length of 2-inch (51-mm). This is cheaper than any other satisfactory plastic product that we looked at. PVC is also lightweight and is available everywhere. For larger signs, 3-inch (76-mm)-diameter Schedule 40 PVC costs about \$8.50 for 10 feet (3 m).

PVC Fenceposts

The Bend/Fort Rock Ranger District also tried 5- by 5-inch (125- by 125-mm) polyvinyl fenceposts placed in the snow. The square fencepost provides a flat surface for attaching the sign. The posts are available from several manufacturers. Even though the posts (Figure 14) are much more expensive than PVC pipe (\$13.25 for a 6.5-foot (2-m) post), they are not long enough for many snow installations.

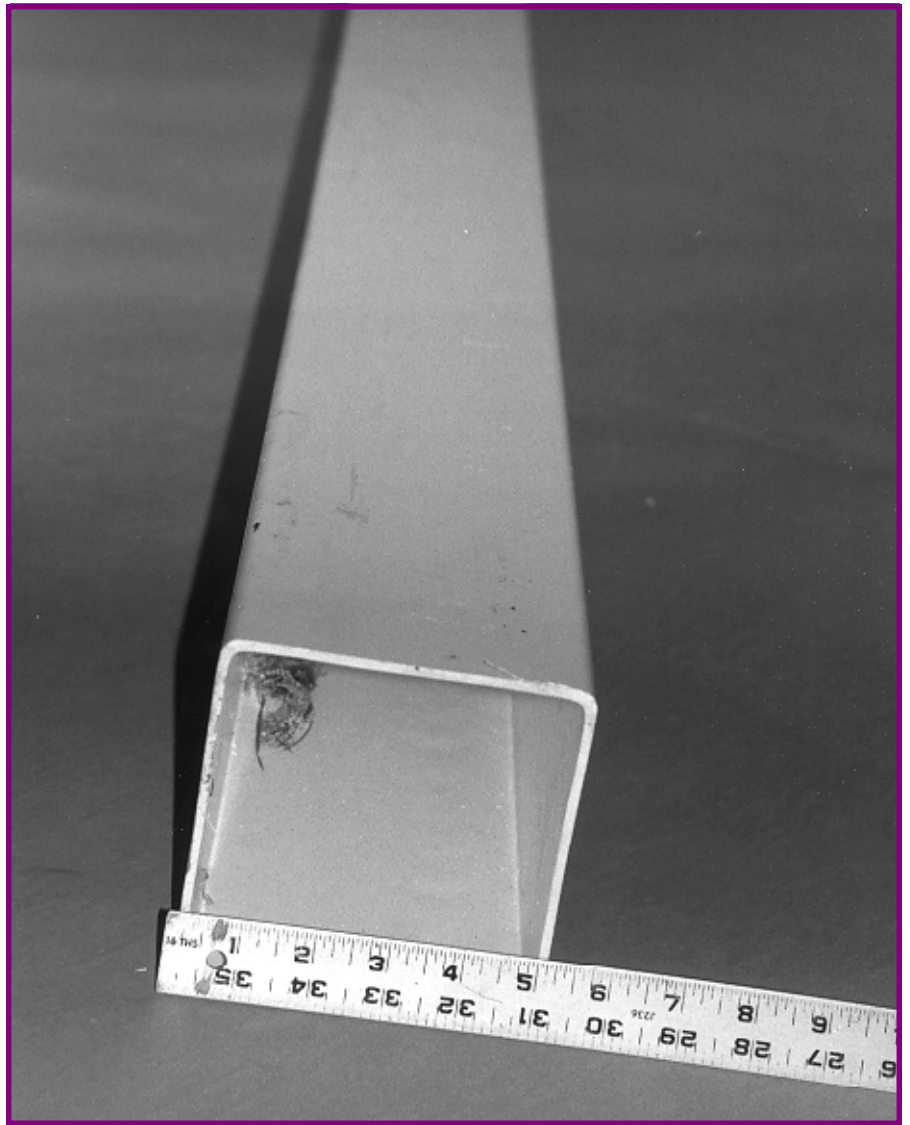


Figure 14—Plastic fenceposts make effective signposts, but are much more expensive than round PVC pipe.

